

**REMARKS**

**I. STATUS OF THE CLAIMS**

In the Office Action mailed May 10, 2005, the Examiner noted that claims 1-5 and 7-15 were pending, and rejected claims 1-5 and 7-15. Claims 1 and 14-15 have been amended herein. Thus, in view of the forgoing claims 1-5 and 7-15 are pending for reconsideration which is requested.

No new matter is being presented, and approval of the claims is respectfully requested. The Examiner's rejections are traversed below.

**II. CLAIMS 1-5 AND 7-15 ARE REJECTED UNDER 35 U.S.C. 112, FIRST PARAGRAPH**

Claims 1 and 14-15 are amended herein to overcome the rejection. Claims 2-5 and 7-13 depend from claim 1, therefore, it is respectfully submitted that the rejection is overcome.

**III. CLAIMS 1-5 and 7-15 ARE OBJECTED TO DUE TO INFORMALITIES**

The Examiner has objected to claims 1, 14 and 15 asserting that the phrase "multi-layer film" is confusing and indefinite. The Examiner also states that the phrases "a second multi-layer film formed on the second surface" and "a stress correction film formed on the second surface" is also confusing.

Claims 1, 14 and 15 have been amended to further clarify the invention. Claim 1, for example, now recites an optical device, comprising ... *a stress correction film formed on the **second multi-layer film**, correcting distortion of the substrate due to a difference in stress between the first and a second multi-layer films formed on the first and second surfaces, respectively.* The phrase **multi-layer film** implies a structure comprising of layers of respectively different refraction index materials. Therefore, the phrase *multi-layer film* in the present invention, as recited in claim 1, for example, typically refers to *plural layers* of film. Support for the amendment can be found on page 15, line 2 thru page 17, line 16. Therefore, it is respectfully submitted that the objection is overcome.

The Examiner also asserts the phrase "substrate is fixed via the first surface to a fixing material" is confusing and indefinite since the claim lacks a logical relationship between the fixing material and the optical device to define an operable and definite optical system. The

Applicant respectfully disagrees. Page 20, line 1 thru page 21, line 23 of the specification describes the process as recited in claim 1, for example, *wherein said substrate is fixed via the first surface of a fixing material having substantially the same thermal expansion coefficient as the substrate...* The process described in the specification makes it clear that the fixing material has substantially the same thermal expansion coefficient as the substrate, thus the claim has a logical relationship between the fixing material and optical device since both the fixing material and substrate simultaneously expand/shrink at the same rate when the temperature changes. Therefore, it is respectfully submitted that the objection is overcome.

**IV. CLAIMS 1-5, 7-15 ARE REJECTED UNDER 35 U.S.C. 103(a) AS BEING UNPATENTABLE OVER SHIRASAKI (U.S. PAT. NO. 5,930,045) IN VIEW OF FUJII (U.S. PAT. NO. 5,424,876) AND OKUMURA ET AL. (U.S. PAT. NO. 5,969,902)**

Claim 1, for example, recites an optical device, comprising ... *a substrate having a first surface and a second surface, wherein said substrate is fixed via the first surface to a fixing material having substantially the same thermal expansion coefficient as the substrate...* The Examiner asserts that Okumura et al. (Okumura) explicitly teaches a disk substrate support member and the disk substrate with materials having the **same** thermal expansion coefficient, to prevent distortion to the substrate when held by the support member and the holder for the benefit of eliminating distortion and errors in the substrate and therefore the VIPA filter. The Applicant respectfully disagrees.

Okumura discloses using, for forming a **substrate support member** of a disk, a material of which the thermal expansion coefficient is similar to that of a substrate material so that the substrate layer of the disk stays flat (column 10, line 29 – column 11, line 3). Okumura does not disclose a "...substrate when held by the support member and the holder for the benefit of **eliminating distortion and errors** in the substrate and therefore the VIPA filter..." because Okumura is unrelated to optical devices. Okumura discloses a magnetic disk substrate formed with ceramics, which is lightweight, highly rigid and difficult to deform, to meet requirements for higher densification of information. Furthermore, Okumura teaches

"...it is possible to achieve the thermal expansion coefficient same as or approximate to that of the magnetic disk substrate if the magnetic disk substrate is supported with the support member according to the invention, the strain of the magnetic disk substrate involved in the thermal expansion

difference is canceled and the levitation rate of the magnetic head can be best minimized and the information recording density can be improved.

(see column 10, lines 17-37)"

Therefore, Okumura is concerned with providing a magnetic disk substrate **support member** comprising a hub, spacers and clamps that have substantially the same thermal expansion coefficient as the magnetic disk substrate. Furthermore, Okumura seeks to reduce differences in the thermal expansion of these components so that the levitation rate of the magnetic head can be minimized (column 9, line 54 – column 10, line 53.)

In contrast, the present invention as recited in claim 1, for example, recites ***an optical device, comprising: a substrate having a first surface and a second surface, wherein said substrate is fixed via the first surface to a fixing material having substantially the same thermal expansion coefficient as the substrate...*** Okumura teaches mechanical **devices** rather than a **fixing material** as recited in the present invention comprising adhesive **films** (hence, the term "material," see page 20, line 1 thru page 21, line 23 of the specification of the present invention). Therefore, Okumura discloses a mechanical device that holds the substrate materials, but not ***a fixing material having substantially the same thermal expansion coefficient as the substrate***, as recited in claim 1, for example. Furthermore, the present invention as recited in claim 1, for example, concerns ***an optical device, comprising: a substrate... correcting distortion of the substrate due to a difference in stress between the first and second multi-layer films formed on the first and second surfaces...*** Therefore, the present invention is concerned with solving the problem of ***correcting distortion of the substrate due to a difference in stress between the first and second multi-layer film***. However, Okumura seeks to solve the problem of minimizing the levitation rate of a magnetic head. Thus, Okumura seeks to solve a completely different problem, using a completely different process that is unrelated to the present invention.

Okumura does not disclose a substrate fixing material nor does Okumura solve the problem of the present invention as recited in claim 1, for example. Furthermore, Okumura, Fujii nor Shiraski discloses or suggests ***...an optical device, comprising: a substrate having a first surface and a second surface, wherein said substrate is fixed via the first surface to a fixing material having substantially the same thermal expansion coefficient as the substrate... correcting distortion of the substrate...*** Therefore, it would not have been obvious to one of ordinary skill in the art at the time of the invention to combine the apparatus taught by Shirasaki with the devices taught by Fujii and Okumura, because neither of these references discloses or

suggests the present invention.

Further, it would not have been obvious to obvious for one of ordinary skill in the art at the time of the invention to combine the apparatus taught by Shirasaki with the devices taught by Fujii and Okumura, because Okumura is concerned with magnetic devices while Shirasaki and Fujii are concerned with optical devices. Neither Shirasaki, Fujii, or Okumura suggest a method or process of combining the technologies taught in all three references to arrive at the present invention.

## **V. IDS**

An IDS was filed on May 20, 2005. It is respectfully requested that the Examiner acknowledge the IDS filed on May 20, 2005.

Moreover, an IDS was filed on December 4, 2004. However, the Examiner has not yet acknowledged the IDS. Therefore, It is respectfully requested that the Examiner acknowledge the IDS filed on December 4, 2004.

Please note that both IDSs are shown in the USPTO PAIR system as having been received.

## **VI. CONCLUSION**

It is respectfully submitted that the claims are not taught, disclosed or suggested by the prior art. The claims are therefore in a condition suitable for allowance. An early Notice of Allowance is requested.

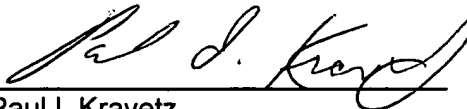
If any further fees, other than and except for the issue fee, are necessary with respect to this paper, the U.S.P.T.O. is requested to obtain the same from deposit account number 19-3935.

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Respectfully submitted,

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